PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY12/13 CYCLE

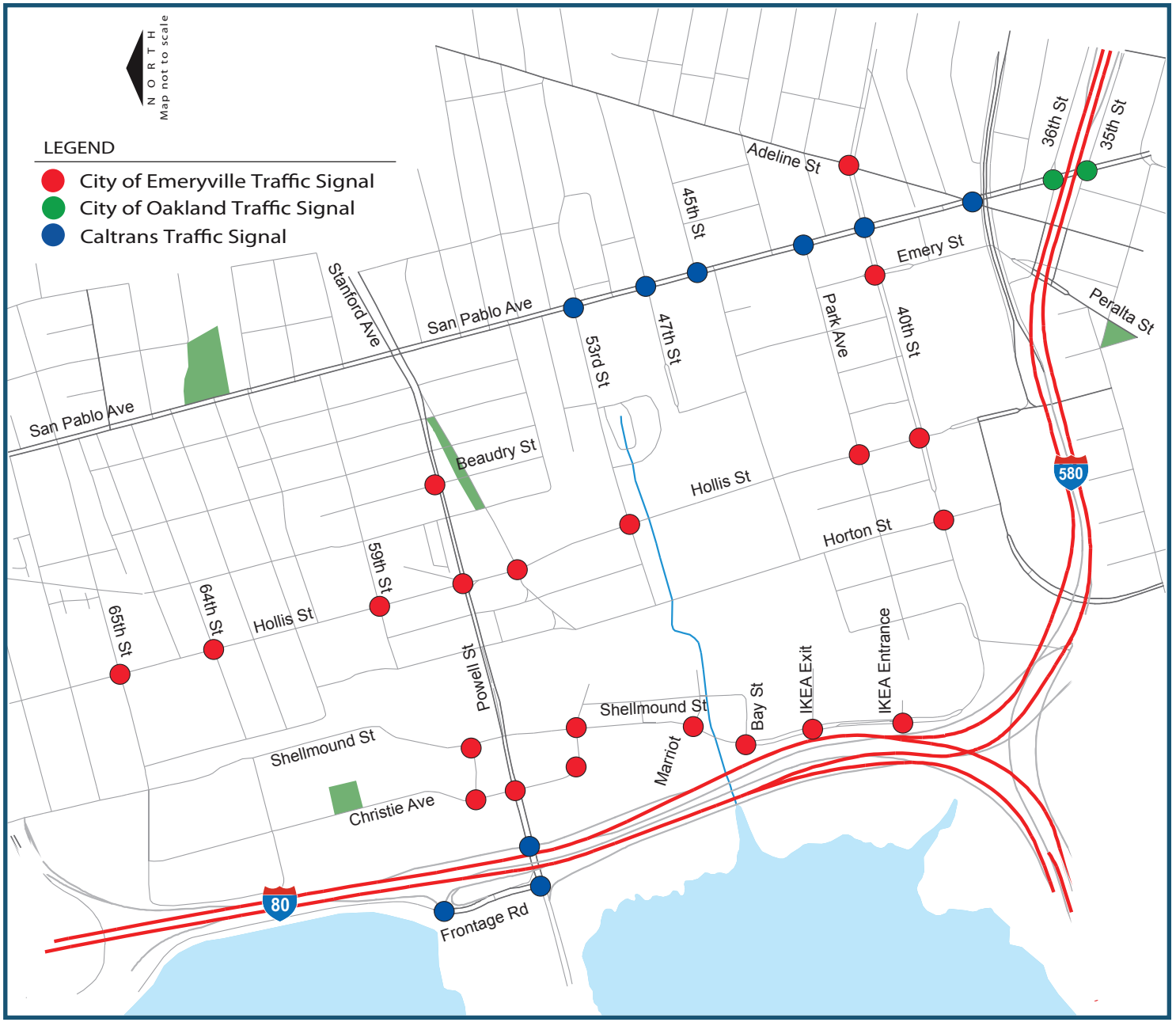
Emeryville Citywide Signal Timing Project

City of Emeryville I City of Oakland I Caltrans I Metropolitan Transportation Commission

PROJECT OVERVIEW

The City of Emeryville, in conjunction with the City of Oakland and Caltrans, received a Program for Arterial System Synchronization (PASS) grant from the Metropolitan Transportation Commission (MTC) to develop and implement weekday and weekend (except Hollis St) signal coodination plans for 32 signals along San Pablo Ave, Hollis St, 40th St, and the Shellmound St/Christie Ave/ Powell St route.

This project also developed transit signal priority (TSP) timing plans for 14 signals and a feasibility study to implement TSP at 10 signals. Based on the study results, TSP was implemented at six additional signals. The schedule of this PASS project was cooridnated with the I-80 Integrated Corridor Mobility (ICM) project which installed the signal interconnect cable to Powell St at Hollis St intersection to support traffic signal coordination along Powell St. The performance evaluation shows reduced congestion, stops, signal delay and travel time; anticipated reduction in harmful greenhouse gas emissions; and improve traffic safety for all modes of users.



Transit Signal Priority (TSP)

EMERY GO-ROUND

The PASS procured and provided support for the installation of 16 Opticom Priority LED Emitters on all of the Emery Go-Round buses to enable signal priority for these buses. This shuttle service provides free transportation to Emeryville residents, shoppers, visitors and employees of local businesses by serving various routes throughout the city with a frequency of 10-15 minutes seven days a week.

Benefits to Various Modes

Benefits to Bicyclists: For improved safety for bicyclists, the minimum green intervals were reviewed and updated at 27 project intersections.

Benefits to Pedestrians: For improved safety, the pedestrian crossing intervals were reviewed and increased at 16 intersections based on the current 2012 California MUTCD standards.

Benefits to Transit: The project included updating amd emanbling TSP settings at 14 intersections, and deploying new TSP timings at six intersections. These updated settings are expected to reduce transit delays and stops.

Benefits to Traffic Safety: To enhance traffic safety, the yellow clearance timing parameters were updated based on current standards. Changes to clearance intervals were made at 12 project intersections.

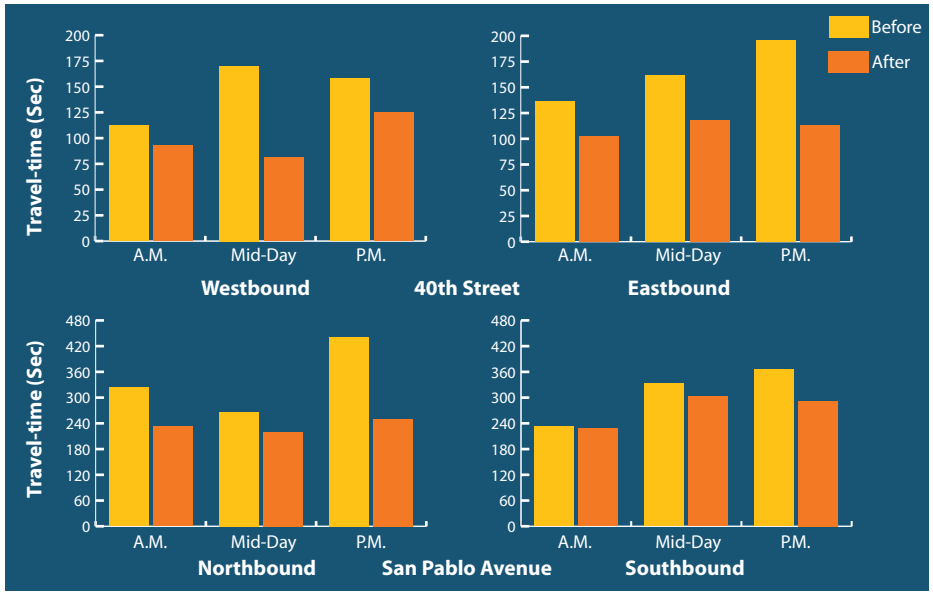
Project Costs

Consultant Costs (Weekday/end Timing, Transit Travel Time Runs, TSP Timing, Timing Sheets)	$164,285
Other Project Costs (TSP Feasibility Study)	$5,280
Agency Staff Costs (Estimate)	$41,071
Total Costs	**$210,636**

Project Benefits

Measures	*Annual Average*		*Lifetime (5 Years)*	
	Savings	*Monetized Savings*	*Savings*	*Monetized Savings*
Travel Time Savings	29,346 hrs.	$560,154	146,732 hrs.	$2,800,771
Fuel Consumption Savings	90,087 gal.	$362,036	450,434 gal.	$1,810,181
ROG Emissions Reduction	0.77 tons	$975	3.87 tons	$4,874
NOx Emissions Reduction	1.03 tons	$18,620	5.17 tons	$93,100
PM10 Emissions Reduction	0.14 tons	$20,081	0.69 tons	$100,407
CO Emissions Reduction	3.83 tons	$296	19.14 tons	$1,480
			Total Lifetime Benefits	**$4,810,814**
Transit Travel Time Savings	2,712 hrs.	$51,771	13,561 hrs.	$258,854
			Total Lifetime Benefits with Transit	**$5,069,668**

Overall Project Benefits	***Auto***	***Transit***
Average Decrease in Travel Time	**19%**	**5%**
Average Speed Increase	**39%**	**4%**
Average Fuel Savings	**13%**	N/A
Average Reduction in Signal Delay	**42%**	N/A
Average Reduction in Number of Stops	**34%**	N/A
Overall Benefit-Cost Ratio	**25:1**	



Project Benefits Summary

Average Reduction in Auto Signal Delay: 42%

Average Reduction in Number of Stops: 34%

Auto Fuel Consumption Savings: 13% or 450,434 gallons

Total Emissions Reduced (ROG, Nox, PM10, CO): 28.87 tons

Auto Travel Time Savings: 19% or 146,732 hours

Average Transit Travel Time Savings: 5% or 13,561 hours

Overall Project Benefit-cost Ratio = 25:1

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Caltrans